SENSORS AND ACTUATORS B VOLUME B5, NOS. 1–4, AUG.–DEC. 1991

Contents

Fiber optic biosensing based on molecular recognition. 1
O. S. Wolfbeis (Graz, Austria)

New approaches for improving semiconductor gas sensors 7
N. Yamazoe (Kasuga-shi, Fukuoka, Japan)

H_2S monitoring as an air pollutant with silver-doped SnO_2 thin-film sensors 21
V. Lantto and J. Mizsei (Oulu, Finland)

Detection and measurements of odor by sintered tin oxide gas sensor 27
K. Fukui (Osaka-shi, Japan)

Thin-film gas catalytic microsensor 33
C. Vauchier, D. Charlot, G. Delapierre (Grenoble, France) and A. Accorsi (Verneuil-en-Halatte, France)

Selective detection of nitrogen dioxide and diisopropyl methylphosphonate with an interdigitated gate electrode field-effect transistor (IGEFET). 37
E. S. Kolesar, Jr. and J. M. Wiseman (Dayton, OH, U.S.A.)

Iridium oxide as actuator material for the ISFET-based sensor–actuator system 47
W. Olthuis, J. G. Bomer, P. Bergveld, M. Bos and W. E. van der Linden (Enschede, The Netherlands)

Odorant sensor using lipid-coated SAW resonator oscillator. 53
S.-M. Chang, E. Tamiya, I. Karube, M. Sato and Y. Masuda (Tokyo, Japan)

The study of polyimide films and adhesion using a surface acoustic wave sensor. 59
D. W. Galipeau, J. F. Vetelino, R. Lec (Orono, ME, U.S.A.) and C. Feger (Yorktown Heights, NY, U.S.A.)

Ion-sensitive field-effect transistor sensors with a covalently bound monolayer membrane: example of calcium detection 67
N. Jaffrezic-Renault, J. M. Chovelon, H. Perrot (Ecully, France), P. Le Perche and Y. Chevalier (Vernaison, France)

A universal on-wafer fabrication technique for diffusion-limiting membranes for use in microelectrochemical amperometric sensors. 71
A. van den Berg, A. Grisel, M. Koudelka and B. H. van der Schoot (Neuchâtel, Switzerland)

Implementing chemical sensors in industry: novel approaches. 75
N. Blom, J. C. Fettinger, J. Koch, H. Lüdi, A. Manz and H. M. Widmer (Basel, Switzerland)

Bioanalysis with surface plasmon resonance. 79
S. Löfås, M. Malmqvist, I. Rönnberg, E. Stenberg (Uppsala, Sweden), B. Liedberg and I. Lundström (Linköping, Sweden)

Reproducible electrodeposition of biomolecules for the fabrication of miniature electroenzymatic biosensors 85
K. W. Johnson (Indianapolis, IN, U.S.A.)

A new carbon monoxide sensor based on a hydrophobic CO oxidation catalyst. 91
K. Marcinkowska, M. P. McGauley and E. A. Symons (Chalk River, Ont., Canada)

A new type of CO_2 gas sensor based on capacitance changes. 97
T. Ishihara, K. Kometani, Y. Mizuhara and Y. Takita (Dannoharu, Oita, Japan)

Equilibrium and non-equilibrium conductance response of sintered SnO_2 samples to CO 103
V. Lantto and T. S. Rantala (Oulu, Finland)

A selective solid-state gas sensor for halogenated hydrocarbons 109
Z. Cao (Chicago, IL, U.S.A.) and J. R. Stetter (Naperville, IL, U.S.A.)

Oxygen sensing with long-term stable Ga_2O_3 thin films 115
M. Fleischer and H. Meixner (Munich, F.R.G.)

Elsevier Sequoia, Lausanne

Fabrication and characterization of a platinum/ceramic electrochemical sensor 121
R. S. Tieman, D. H. Igo, W. R. Heineman (Cincinnati, OH, U.S.A.), J. Johnson and R. Seguin (Yellow Springs, OH, U.S.A.)

Development of quantitative odour supplier for plant leaf sensor system 129
H. Matsuoka, S. Dousaki, K. Sera, A. Shinohara and H. Ishii (Tokyo, Japan)

Humidity sensor using NASICON not containing phosphorus 135
H. Yagi and T. Saiki (Komaki-shi, Aichi, Japan)

An electroenzymatic glucose sensor fabricated on a flexible substrate 139
J. J. Mastrototaro, K. W. Johnson, R. J. Morff, D. Lipson, C. C. Andrew and D. J. Allen (Indianapolis, IN, U.S.A.)

$CaZrO_3$-type hydrogen and steam sensors: trial fabrication and their characteristics 145
T. Yajima, H. Iwahara (Nagoya, Japan), K. Koide and K. Yamamoto (Tajimi, Japan)

Characteristics of a thin-film LaF_3 solid electrolyte for oxygen sensing 149
Won-Il Cho, Cheol-Whan Yi, Jeh-Beck Ju, Byung-Won Cho and Kyung-Suk Yun (Seoul, Korea)

Surface chemistry of gas sensors: H_2S on WO_3 films 155
D. J. Dwyer (Orono, ME, U.S.A.)

Humidity sensing properties and electrical permittivity of new photosensitive polyimides 161
T. Boltshauser, L. Chandran, H. Baltes, F. Bose and D. Steiner (Zurich, Switzerland)

Iridium oxide thin-film stability in high-temperature corrosive solutions 165
K. Kreider (Gaithersburg, MD, U.S.A.)

Potentiometric response of PVC/crown ether membrane electrodes to nonionic organic compounds 171
Jun-ichi Anzai and Chung-Chiun Liu (Cleveland, OH, U.S.A.)

A simple intrinsic optical fibre refractometer 173
M. Archenault, H. Gagnaire, J. P. Goure (Saint Etienne, France) and N. Jaffrezic-Renault (Ecully, France)

A novel Pd-SiN_xO_y hydrogen sensor of high stability and sensitivity 181
A. Camanzi, R. Colilli, A. Pelacani (Rome, Italy), M. Severi, S. Solmi and P. Maccagnani (Bologna, Italy)

System to detect hydrogen in water 185
V. Chaplanov, V. Filippov, A. Rzhanov, A. Terentjev and S. Yakimov (Moscow, U.S.S.R.)

Sensitivity of Pd/SiO_2/Si sensor to humidity 187
V. Chaplanov, V. Filippov and A. Terentjev (Moscow, U.S.S.R.)

Surface chemistry and electronic effects of O_2, NO and NO/O_2 on SnO_2 189
A. Chiorino, F. Boccuzzi and G. Ghiotti (Turin, Italy)

Computational enhancement of MOS gas sensor selectivity 193
R. Grace, A. M. Guzman, M. A. Portnoff, P. D. Runco and L. N. Yannopoulos (Pittsburgh, PA, U.S.A.)

A planar integrated chlorinated hydrocarbon gas sensor on a silicon substrate 199
D. Keyvani, J. Maclay, S. Lee (Chicago, IL, U.S.A.), J. Stetter and Z. Cao (Naperville, IL, U.S.A.)

Stabilization of SnO_2 sintered gas sensors 205
Y. Matsuura and K. Takahata (Minoo City, Osaka, Japan)

New-type calorimetric gas sensor using temperature characteristics of piezoelectric quartz crystal fitted with noble metal catalyst film 211
N. Miura, H. Minamoto, G. Sakai and N. Yamazoe (Kasuga-shi, Fukuoka, Japan)

Thin-film gas sensors with organically modified silicates for the measurement of SO_2 219
J. Lin, S. Möller and E. Obermeier (Berlin, F.R.G.)

Two-dimensional and three-dimensional interdigital capacitors as basic elements for chemical sensors 223
J. Lin, S. Möller and E. Obermeier (Berlin, F.R.G.)

A simple type of fire and gas leak prevention system using tin oxide gas sensors 227
T. Oyabu (Kanazawa, Ishikawa, Japan)

Enhancement of MOS gas sensor selectivity by 'on-chip' catalytic filtering 231
M. A. Portnoff, R. Grace, A. M. Guzman, P. D. Runco and L. N. Yannopoulos (Pittsburgh, PA, U.S.A.)

ISFET glucose sensor for undiluted serum sample measurement. 237
A. Saito, S. Miyamoto, J. Kimura and T. Kuriyama (Kawasaki, Kanagawa, Japan)

Analytical application of immobilized acid urease for urea in flow streams. 241
I. Satoh, M. Akahane (Atsugi-shi, Kanagawa-ken, Japan) and K. Matsumoto (Tagata-gun, Shizuoka-ken, Japan)

Calorimetric flow-injection determination of glutathione with enzyme-thermistor detector 245
I. Satoh (Atsugi-shi, Kanagawa-ken, Japan), S. Arakawa and A. Okamoto (Hiratsuka-shi, Kanagawa-ken, Japan)

Biosensing of cholesterol with use of a split-flow enzyme thermistor 249
I. Satoh and N. Teramura (Atsugi-shi, Kanagawa-ken, Japan)

A new technique for the preparation of highly sensitive hydrogen sensors based on $SnO_2(Bi_2O_3)$ thin films 253
G. Sberveglieri, S. Groppelli, P. Nelli (Brescia, Italy) and A. Camanzi (Rome, Italy)

CdS films obtained by graphoepitaxy and investigation of some of their properties 257
P. D. Kervalishvili and V. K. Chakhunashvili (Tbilisi, Georgia, U.S.S.R.)

The behaviour of hydrogen, nitrogen and oxygen impurities in boron carbide and aluminium dodecaboride 261
P. D. Kervalishvili, K. A. Giorgadze and M. L. Tabutsidze (Tbilisi, Georgia, U.S.S.R.)

Conference Calendar 265

Author Index of Volume B5 266

Subject Index of Volume B5 267